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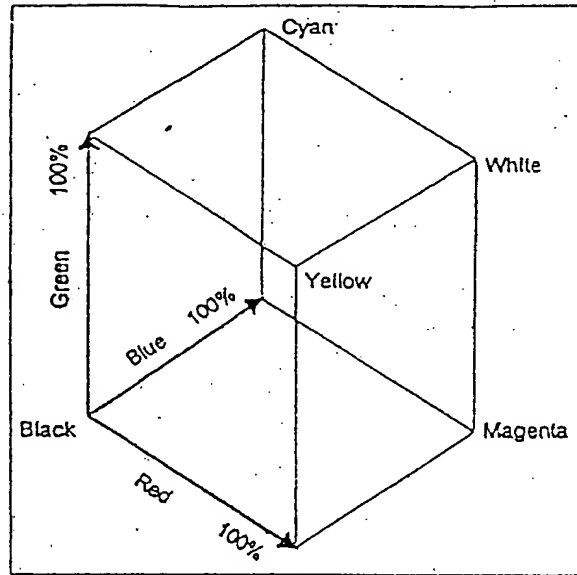


FIG. 1 PRIOR ART

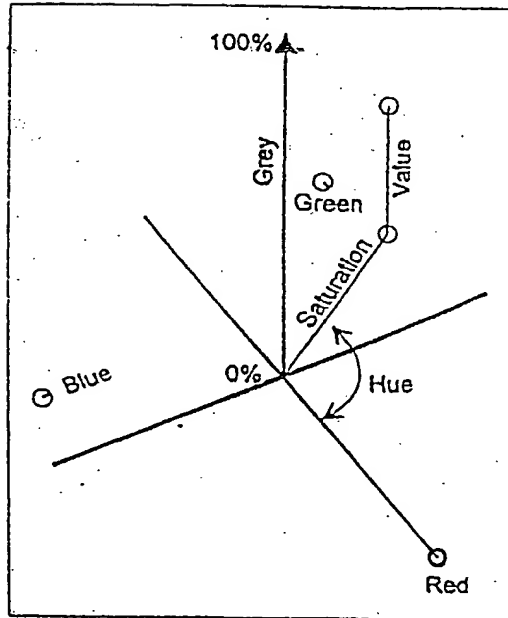


FIG. 2 PRIOR ART

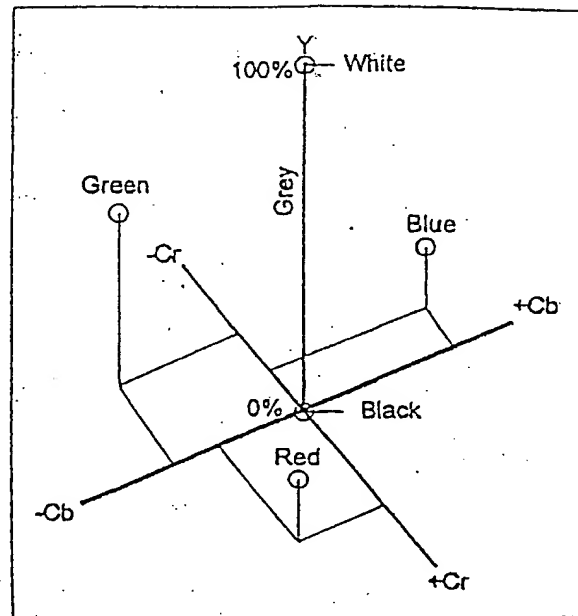


FIG. 3 PRIOR ART

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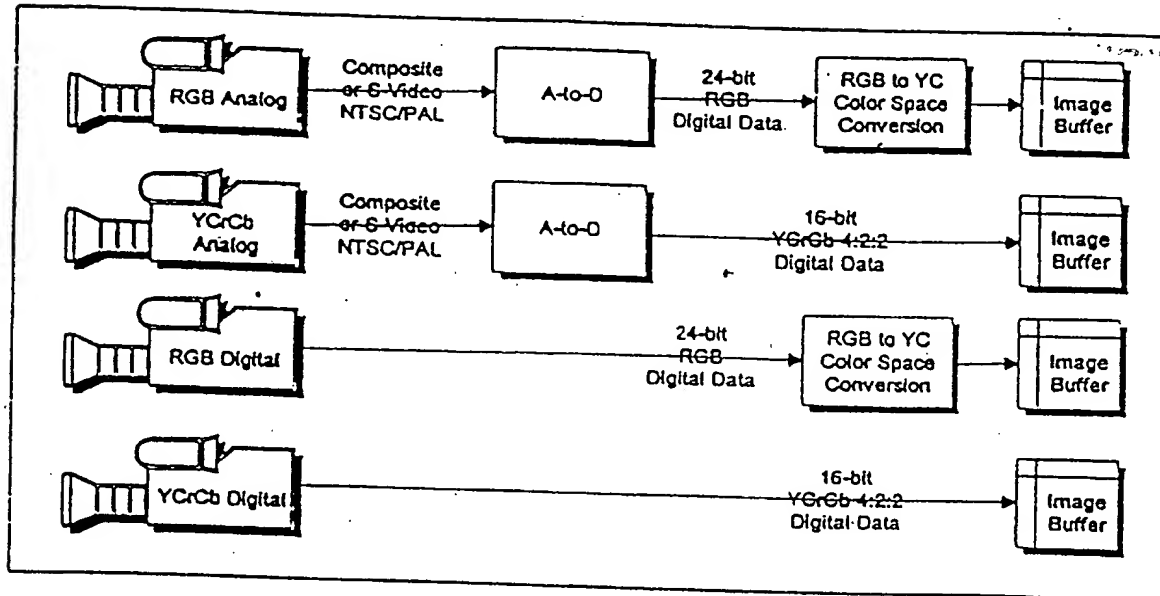


FIG. 4

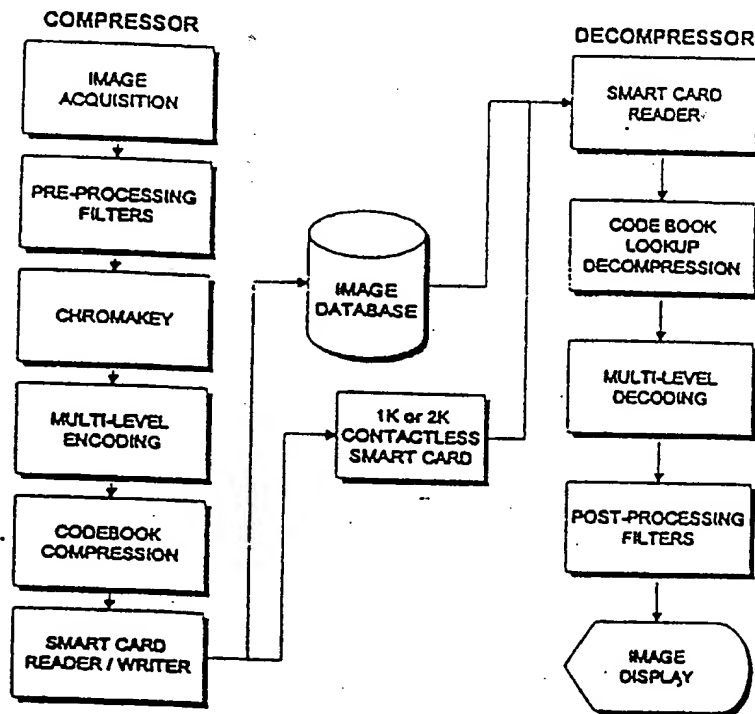


FIG. 5

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If all pixels are within a specified threshold, the output is the average of the four pixels, two on each side of the target.

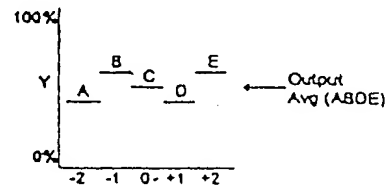
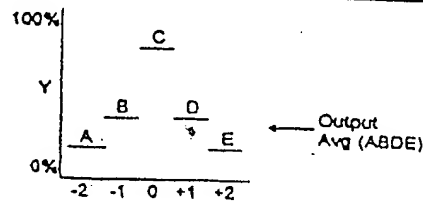
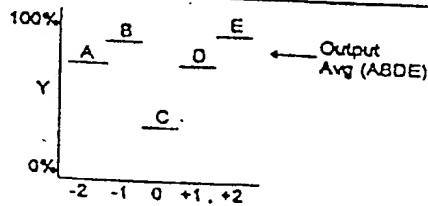


FIG. 6

If the two pixels on either side are within a specified threshold and both sides themselves are within the



threshold; the target pixel is considered to be impulse noise. The output is the average of the two pixels on each side of the target.

FIG. 7

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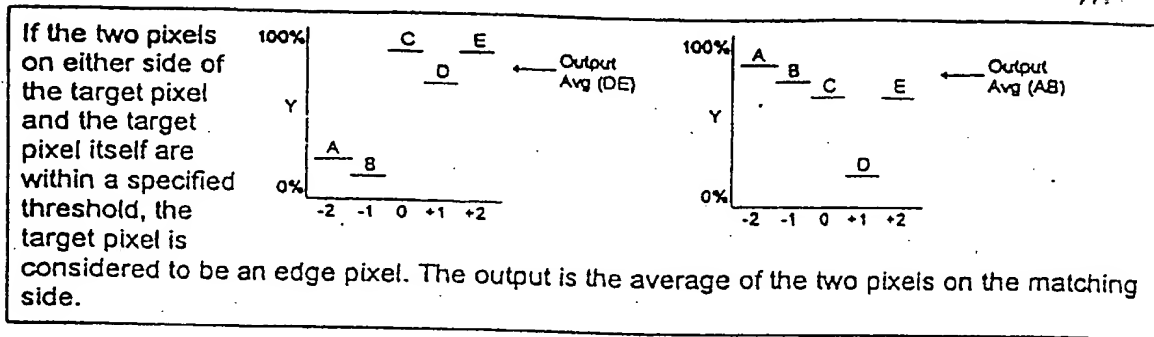


FIG. 8

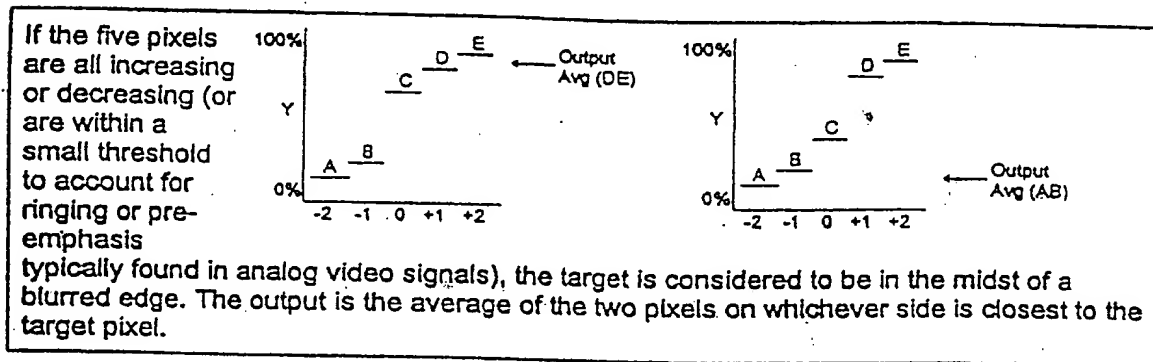


FIG. 9

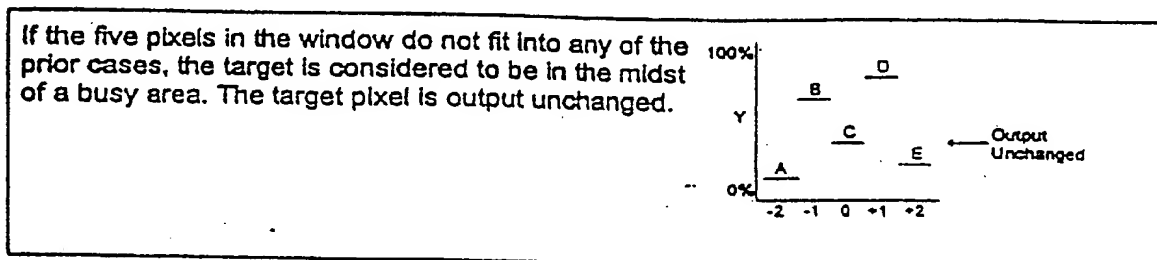


FIG. 10

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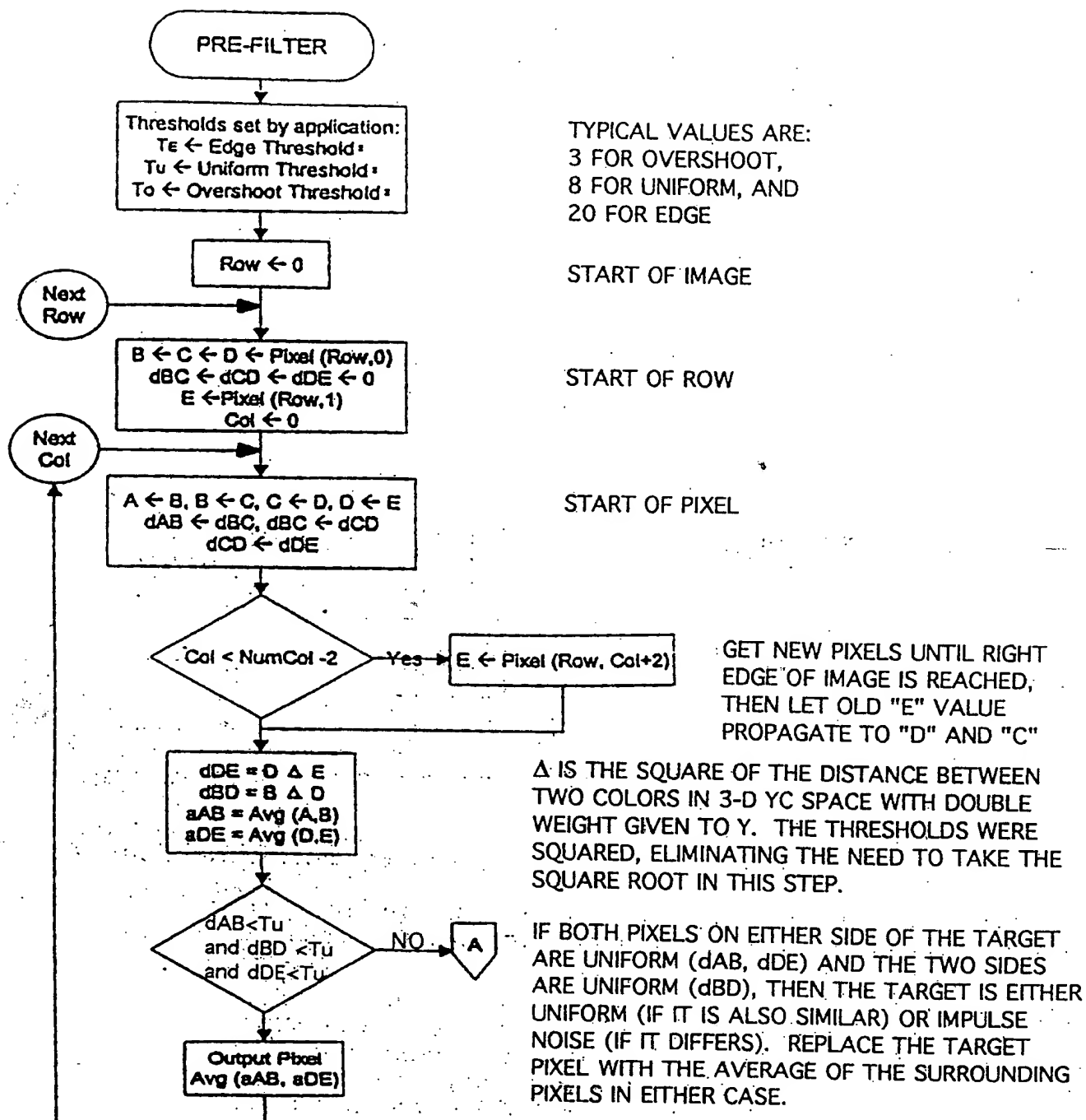


FIG. 11A

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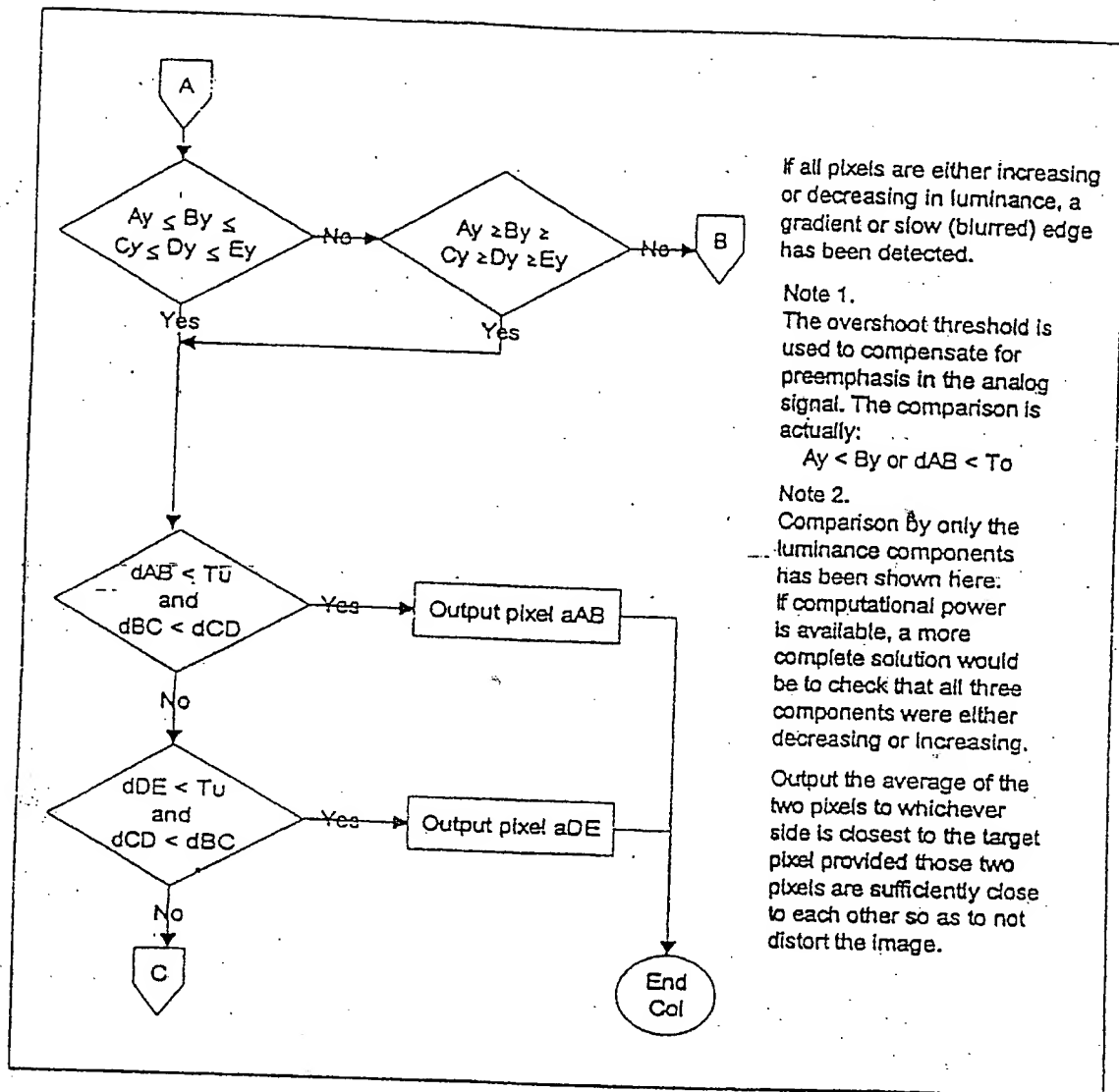


FIG. 11B

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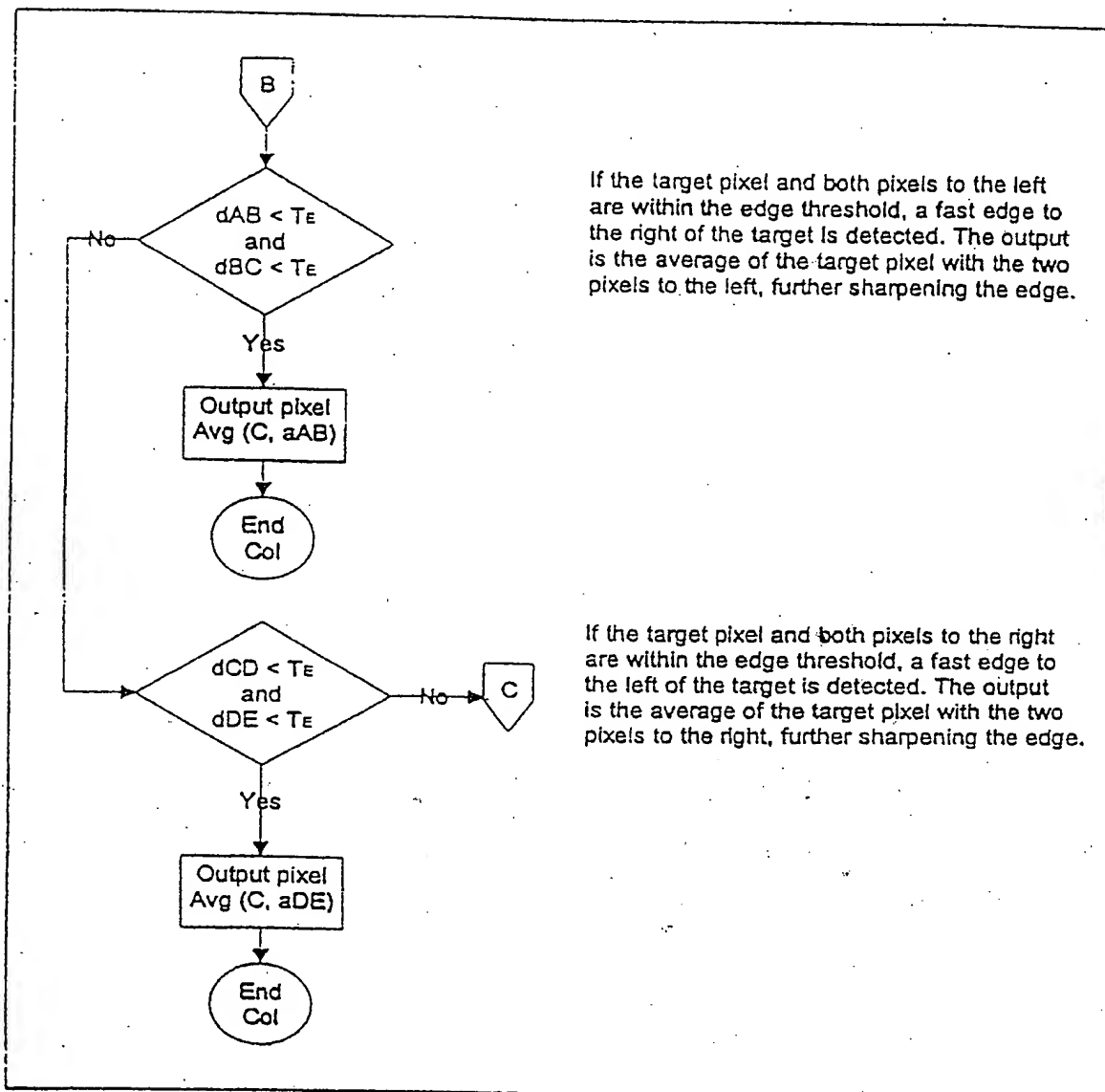
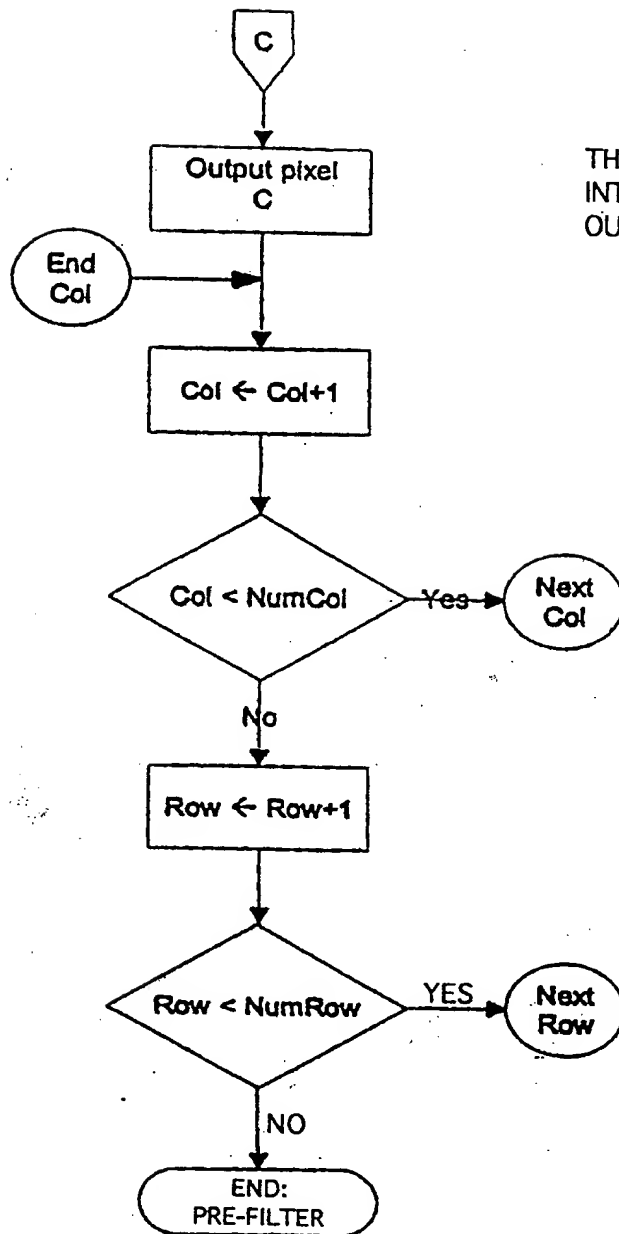


FIG. 11C

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THE TARGET PIXEL HAS NOT FALLEN INTO ANY OF THE CASES, SO IT IS OUTPUT UNCHANGED.

FIG. 11D

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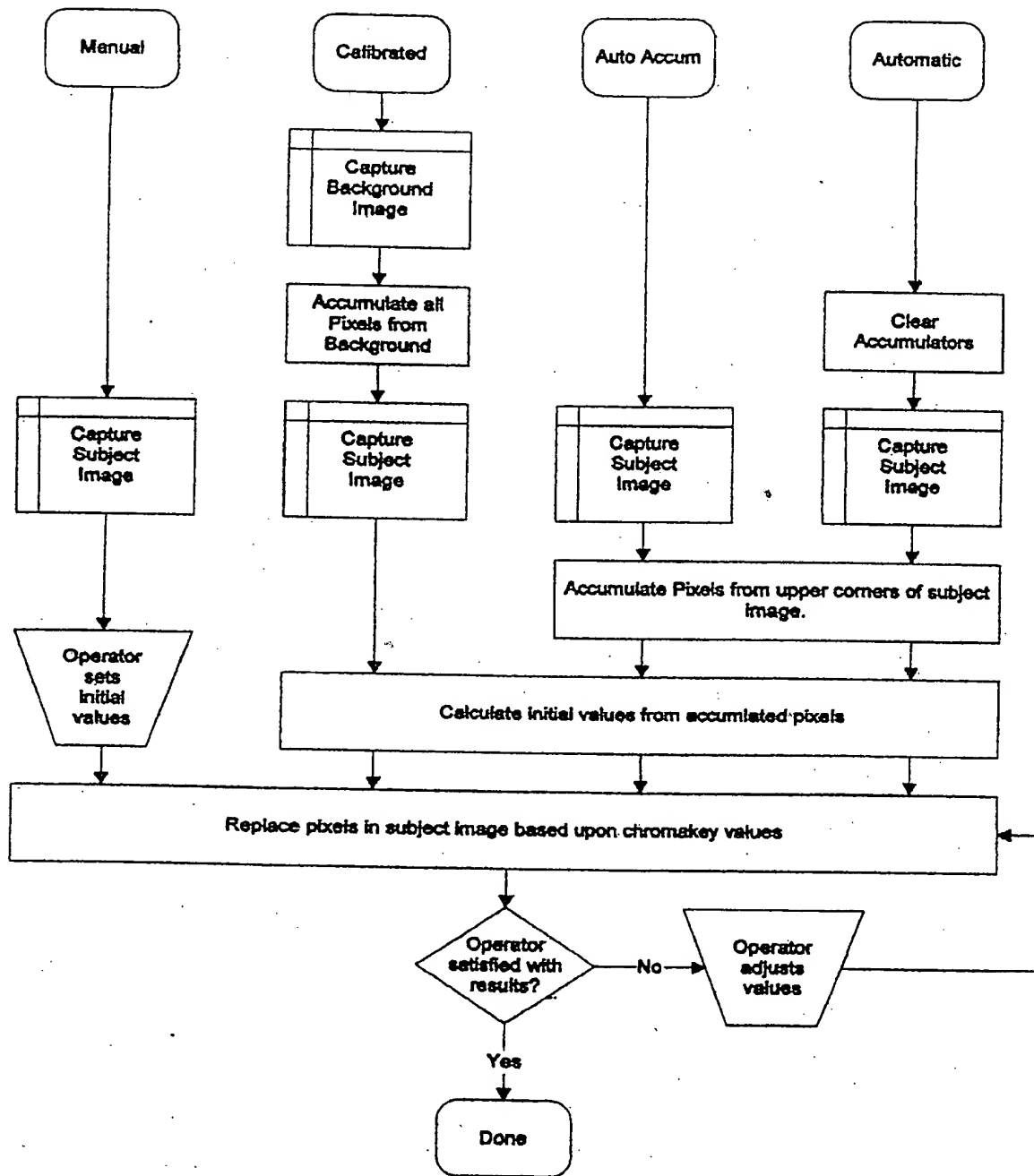


FIG. 11E

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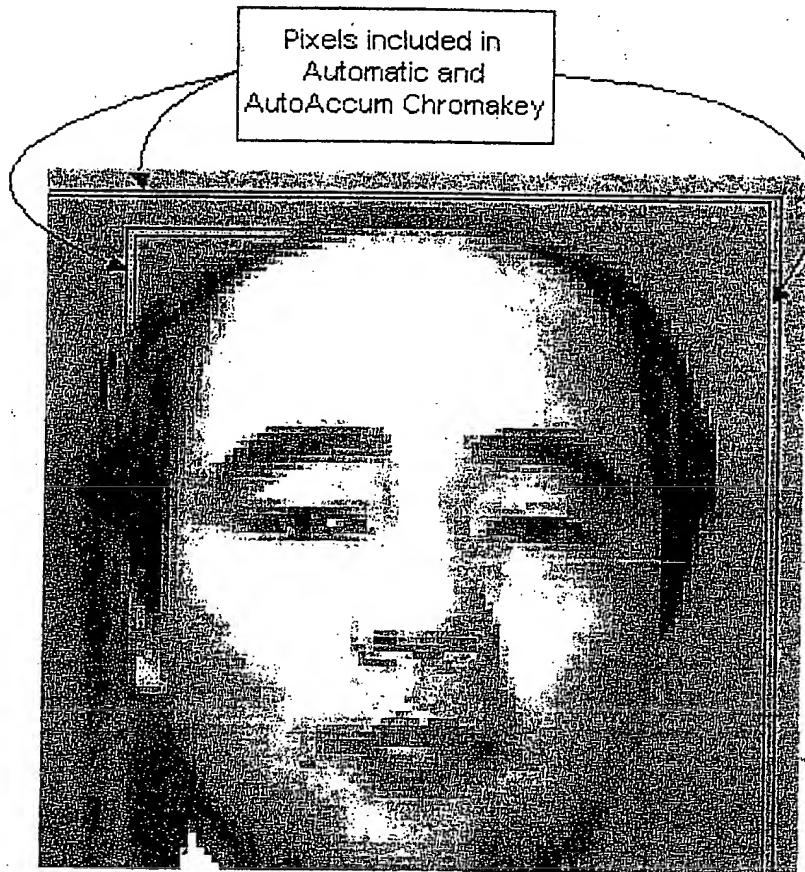
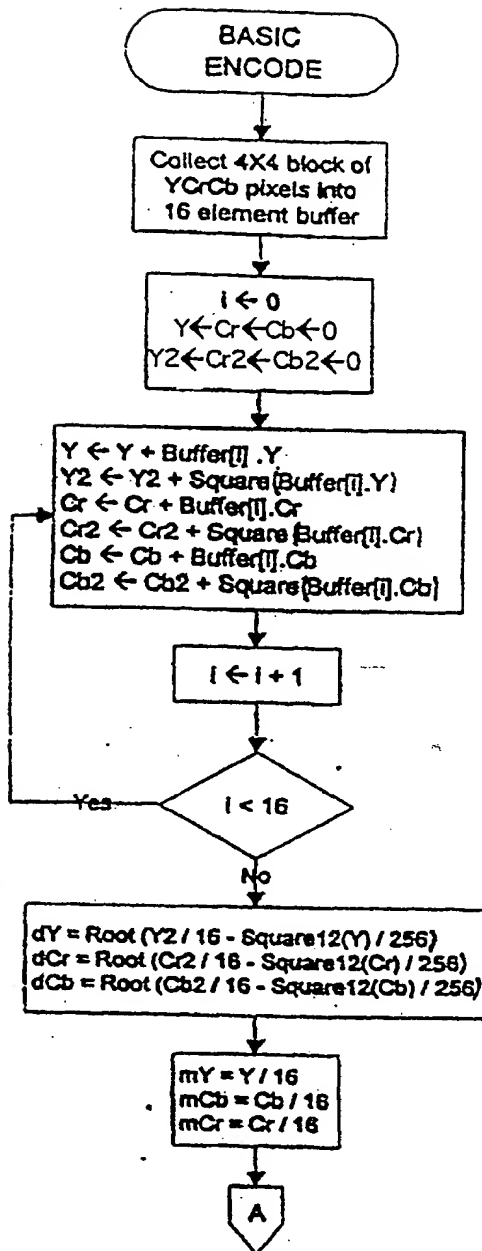


FIG. 11F

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Buffer index will range from 0 to 15.
 Color components will be referred to as: ".Y", ".Cr", and ".Cb"

Step 1 - Collect first and second moments

Accumulate separate component values as squares for each pixel. Squares are calculated by table lookup rather than by multiplication.

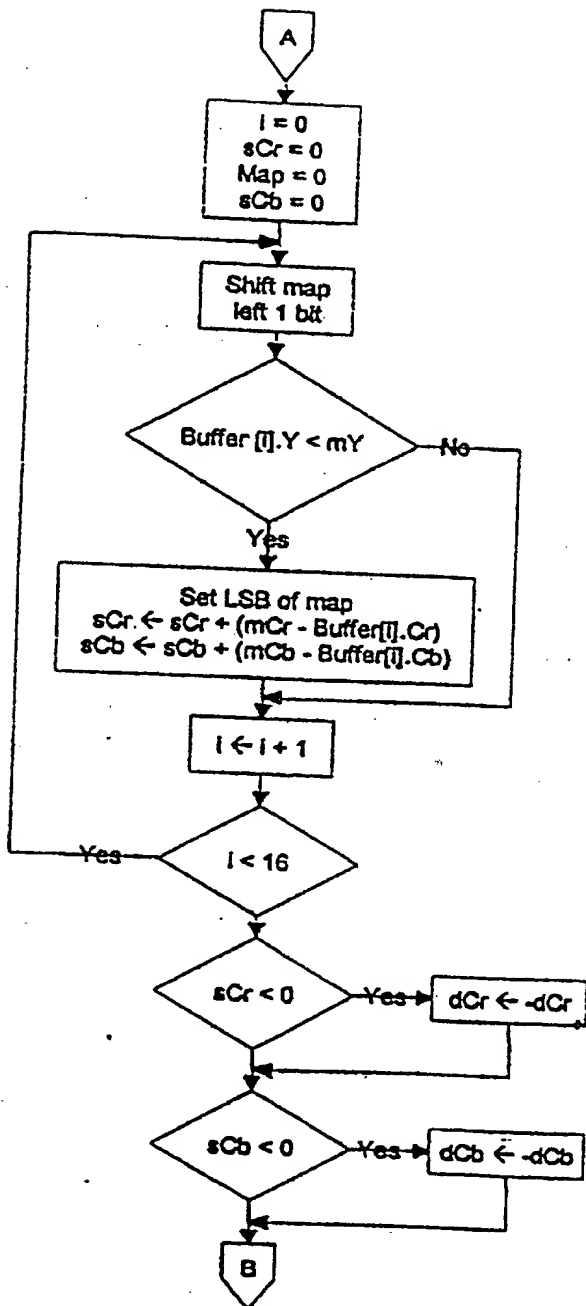
Step 2 - Calculate mean and standard deviation

The square12 function calculates the square of a 12-bit number using the same 8-bit table of squares above and little extra arithmetic. The root function finds roots by binary search of the 8-bit table of squares.

dY, dCr, and dCb are the standard deviations for each component and mY, mCr, and mCb are the arithmetic means.

FIG. 12A

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Step 3 - Determine selector map

Use the mean luminance value for the selector.

The one bits in the map mark those pixels that are "darker" than the mean. Accumulate the signed differences from the mean in each chrominance channel.

If the Cr channel decreases when the luminance increases, invert dCr.

If the Cb channel decreases when the luminance increases, invert dCb.

FIG. 12B

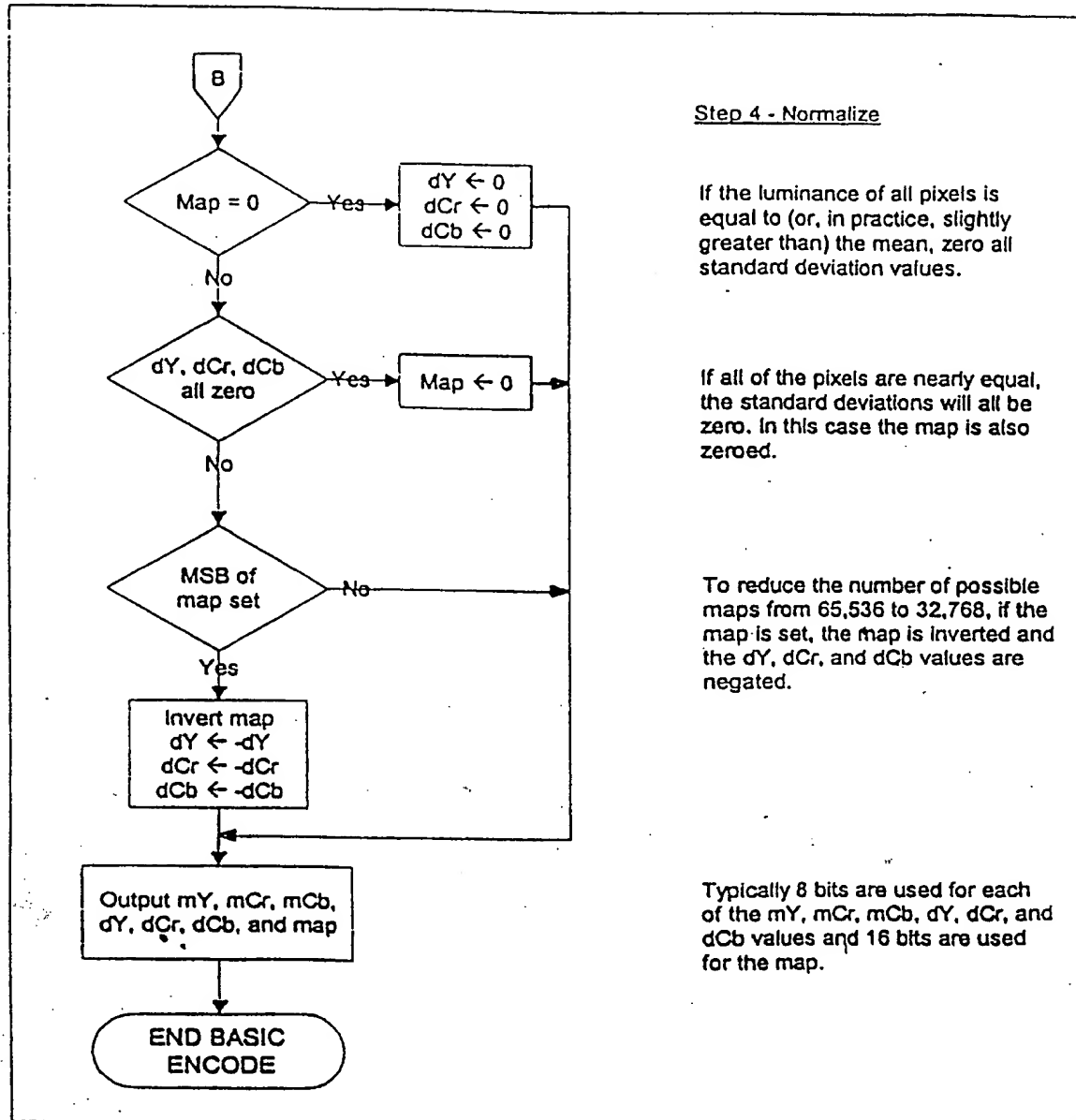


FIG. 12C

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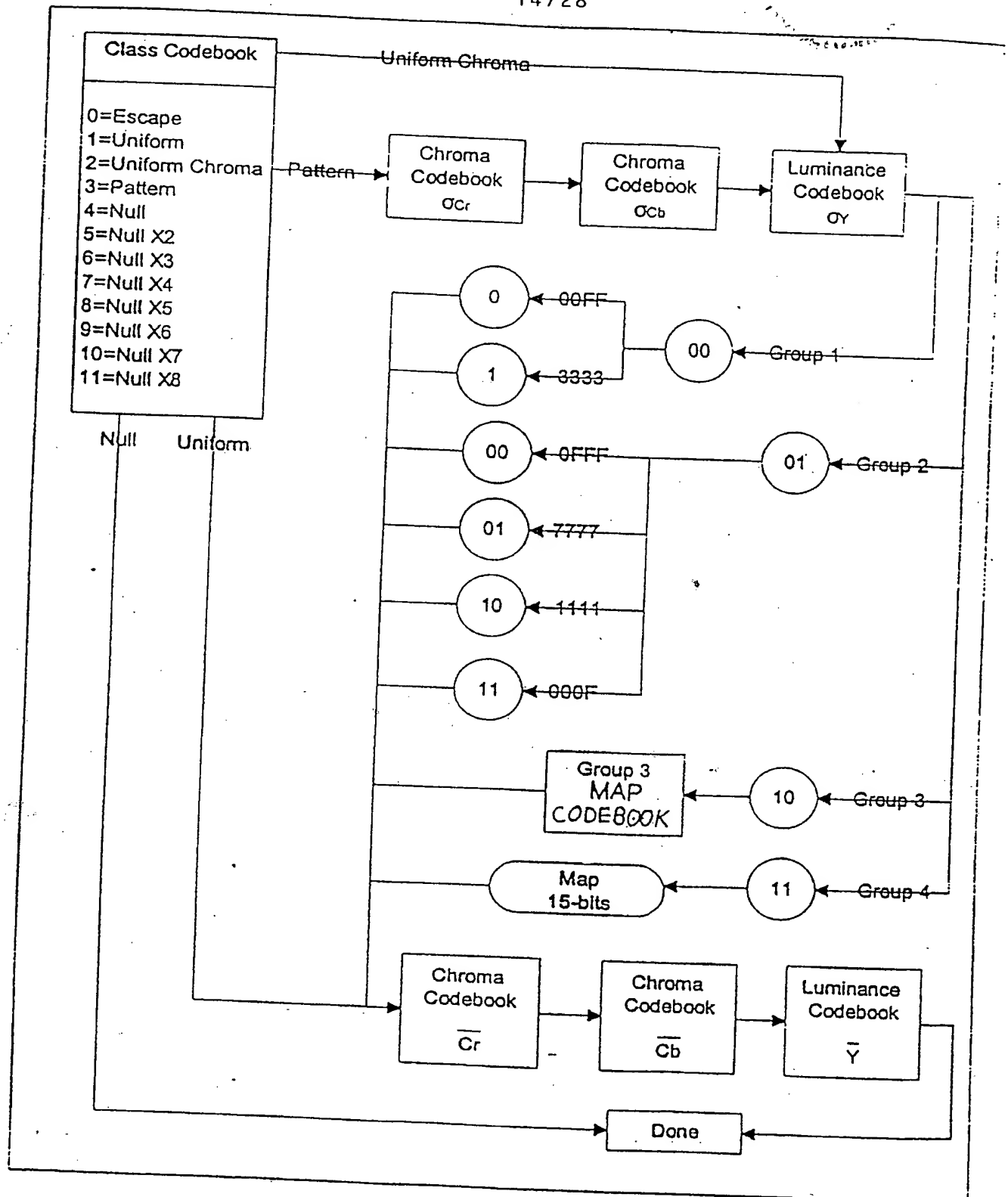


FIG. 13

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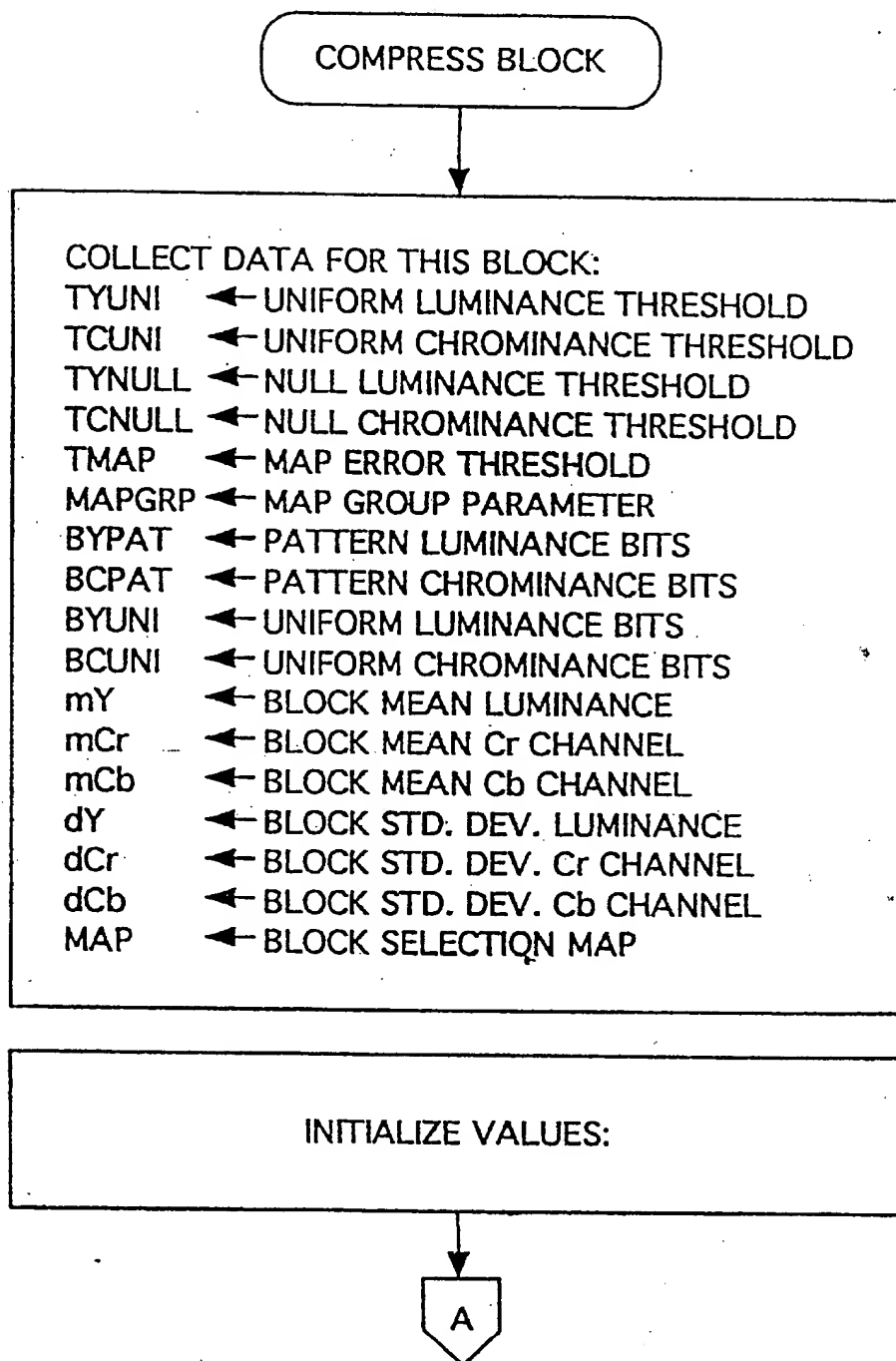


FIG. 14A

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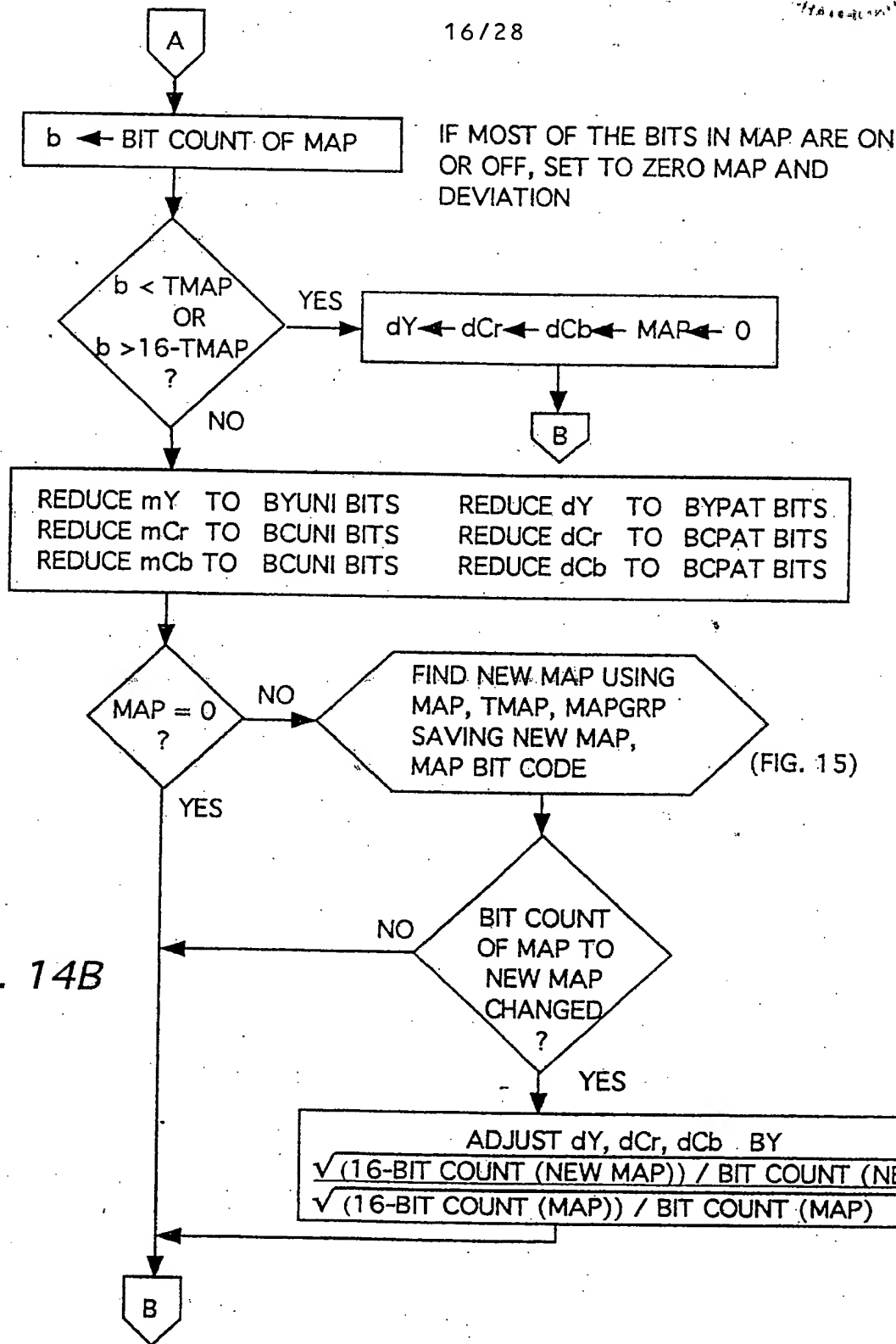


FIG. 14B

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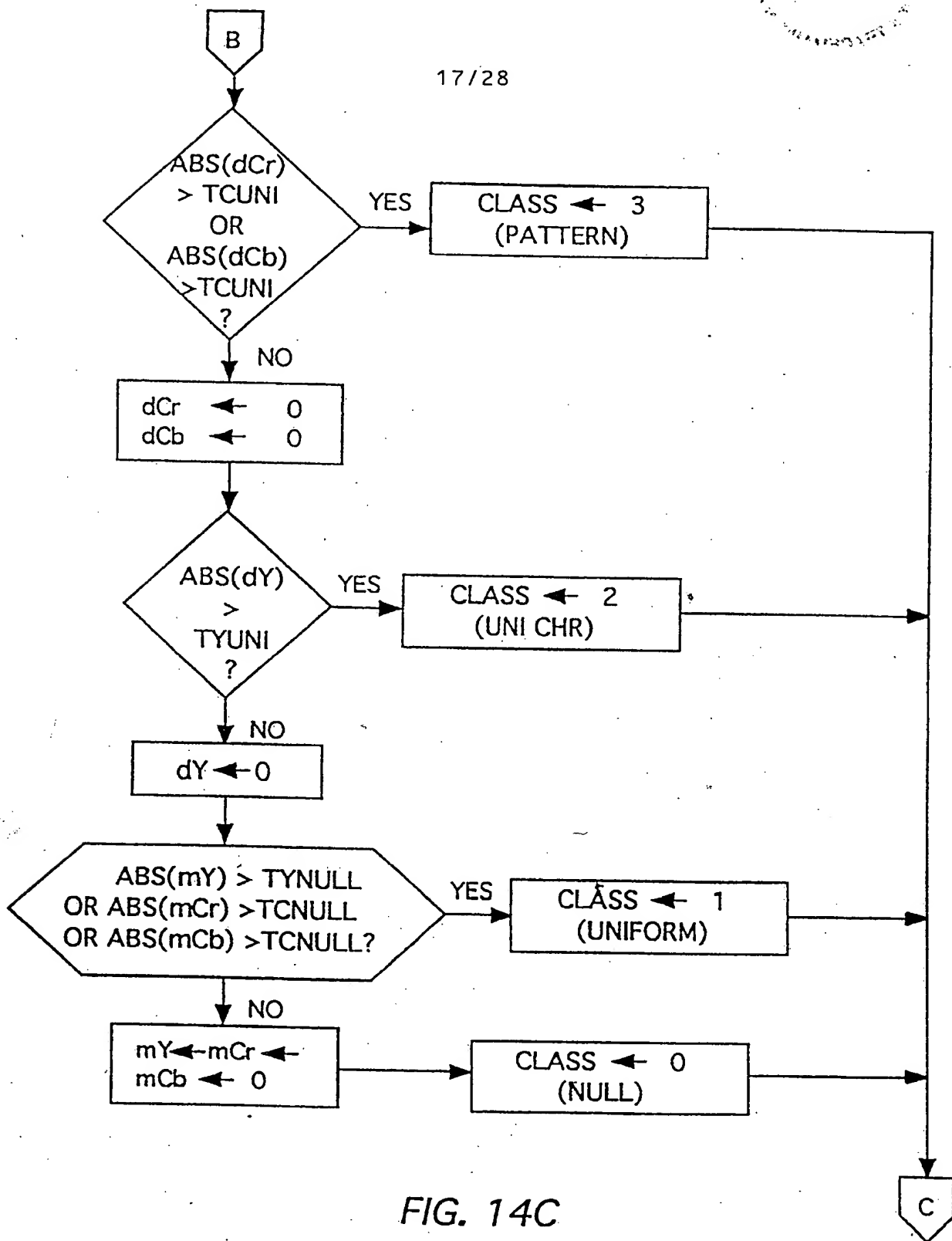


FIG. 14C

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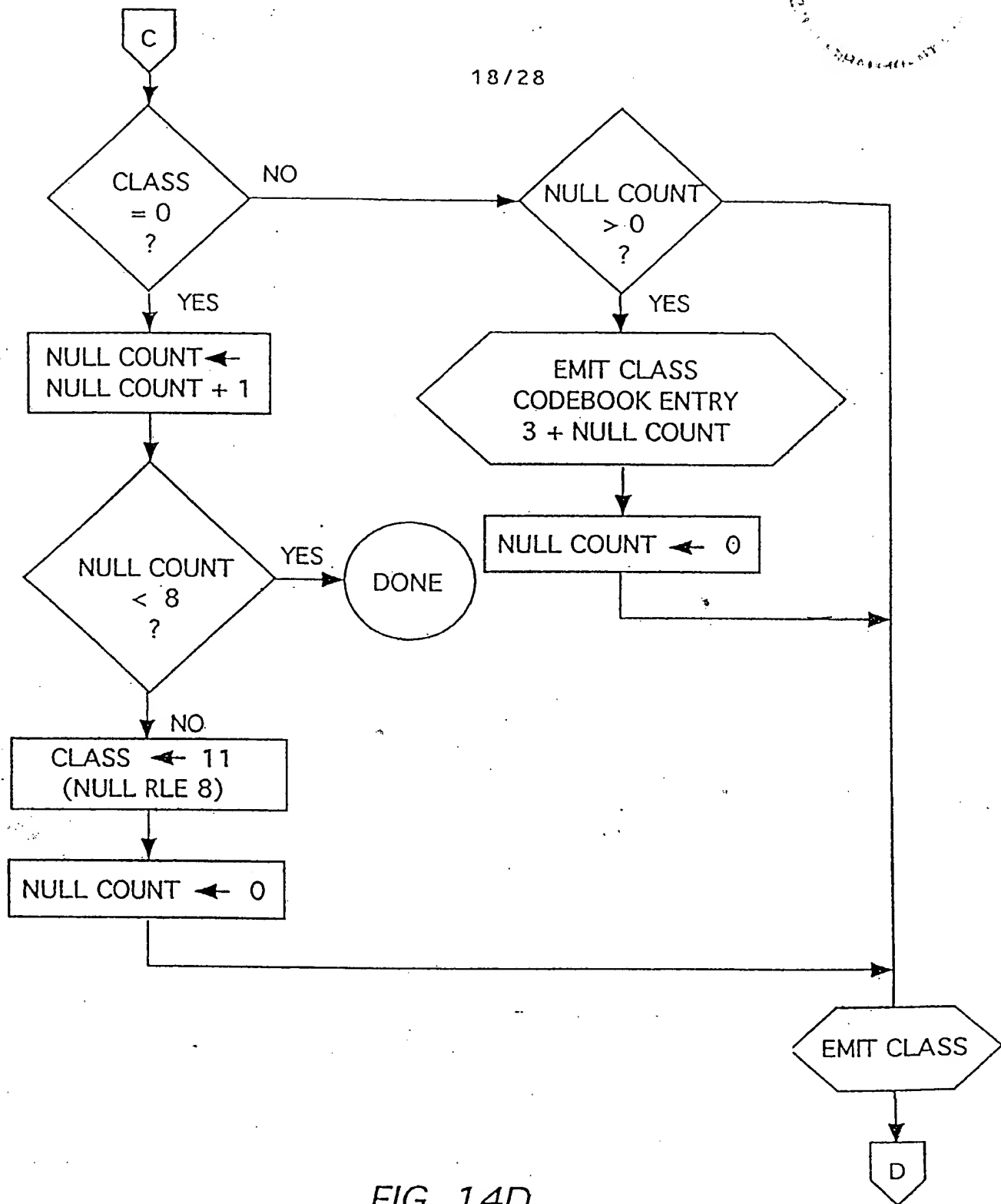


FIG. 14D

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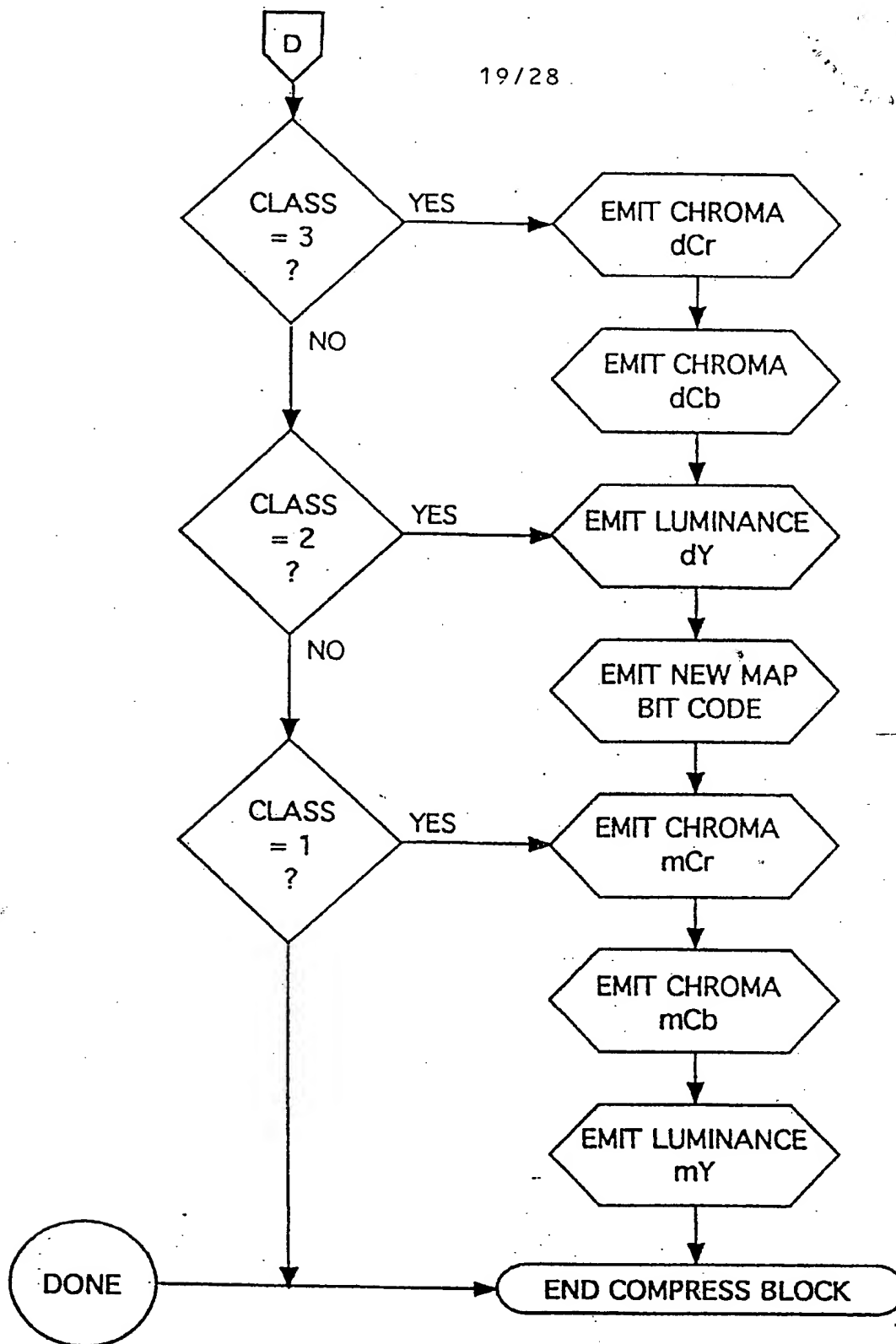


FIG. 14E

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FIG. 15C

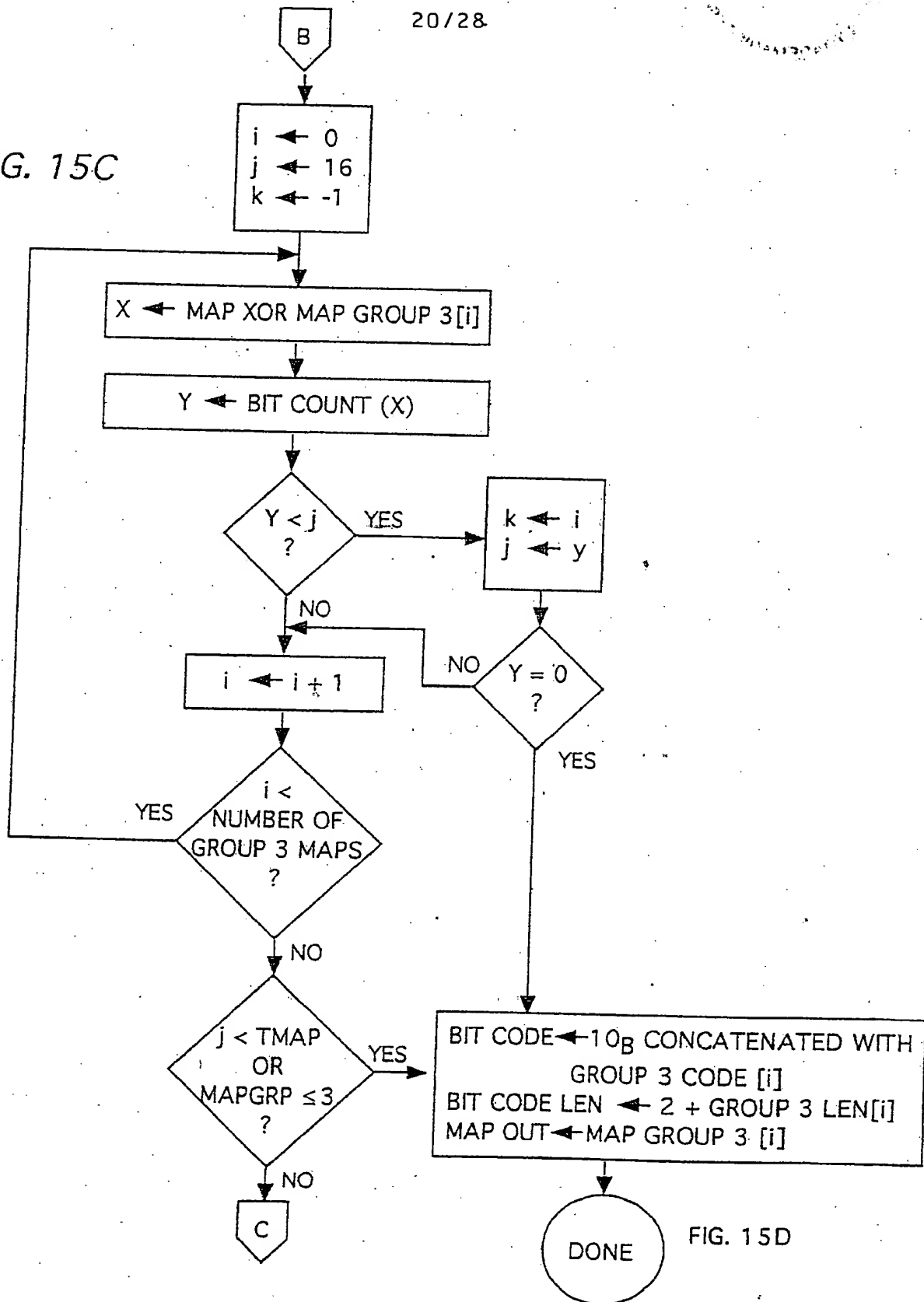


FIG. 15A

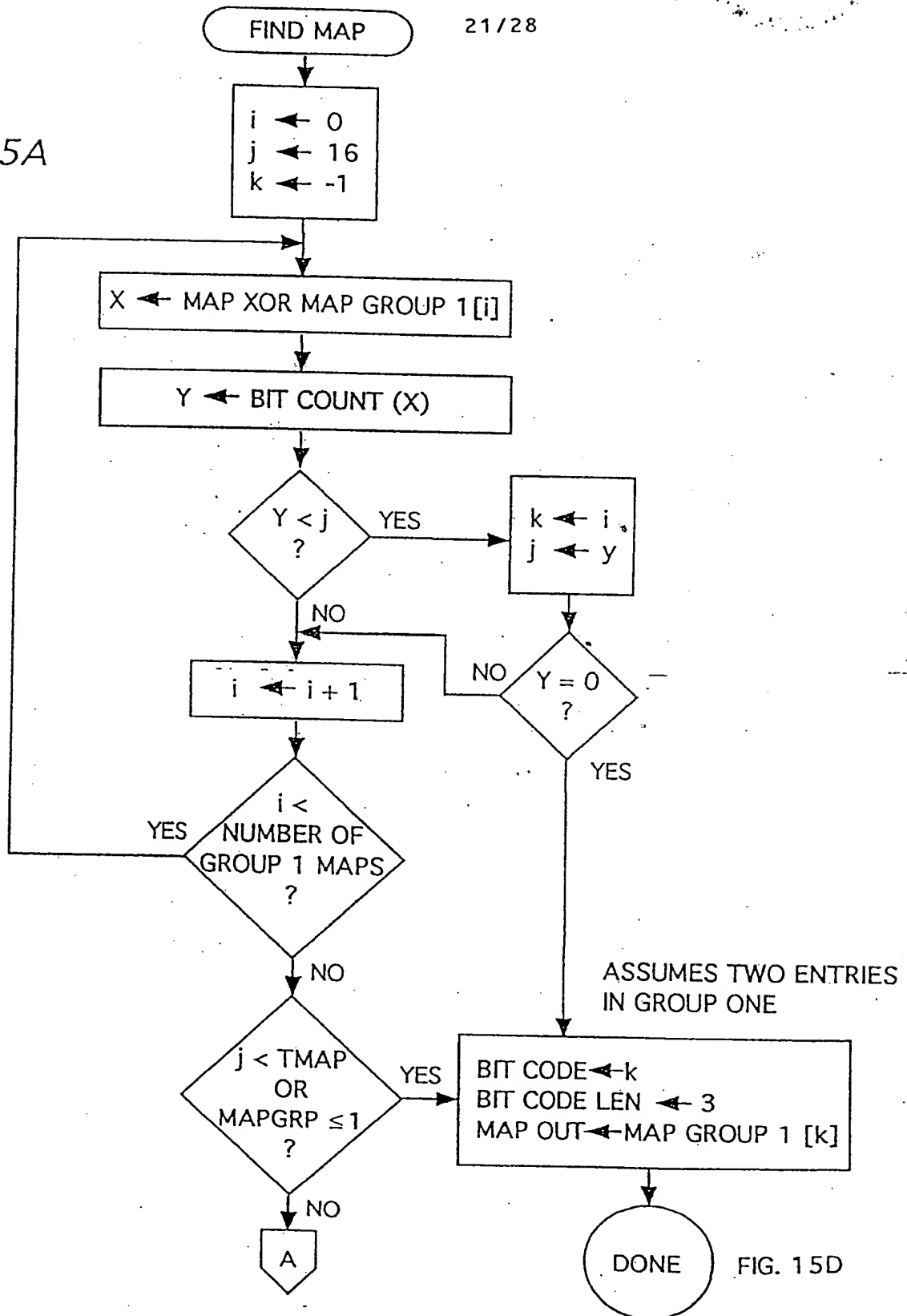
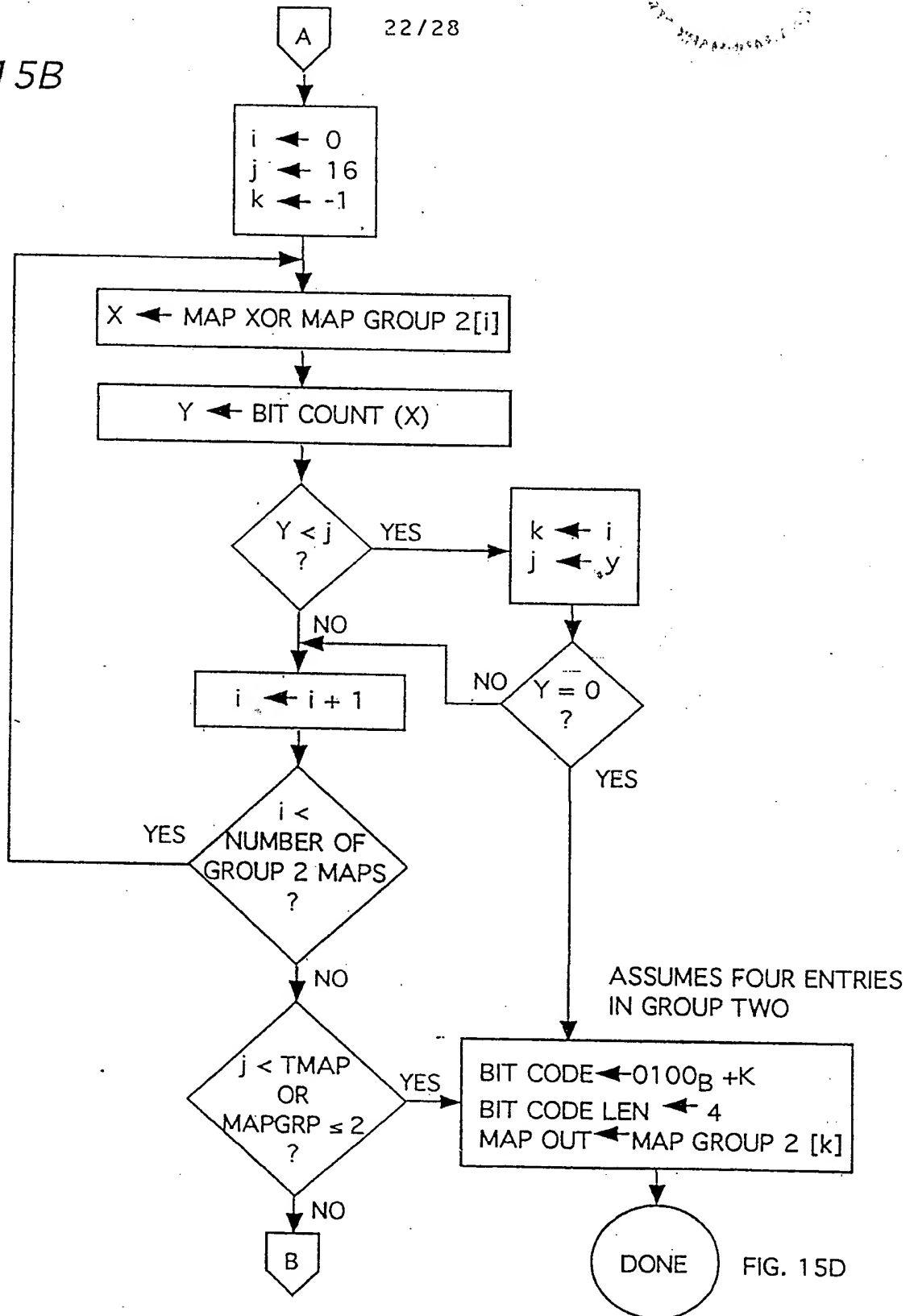


FIG. 15B



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FIG. 16A

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D	B	A	A	B	D
D	B	A	A	B	D
D	C	B	B	C	D
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48	30	6	10	11	17	31	49																																																																																																																																																																																												
40	24	12	4	5	13	25	41																																																																																																																																																																																												
38	8	6	0	1	7	19	39																																																																																																																																																																																												
42	22	3	2	3	9	23	43																																																																																																																																																																																												
X	32	20	14	15	21	33	X																																																																																																																																																																																												
X	X	36	28	29	37	X	X																																																																																																																																																																																												
CONTROL POINTS	<p>1/2</p> <p>1/2</p> <p>①</p>	<p>1/2</p> <p>1/4</p> <p>1/4</p> <p>1/4</p> <p>①</p> <p>②</p> <p>③</p>	<p>1/2</p> <p>1/3</p> <p>1/3</p> <p>1/3</p> <p>①</p> <p>②</p> <p>③</p>																																																																																																																																																																																																

FIG. 16B

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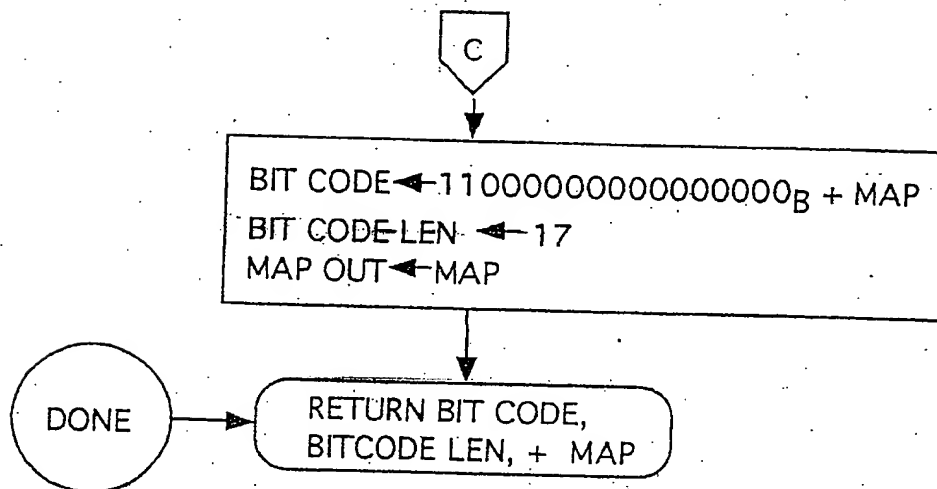


FIG. 15D

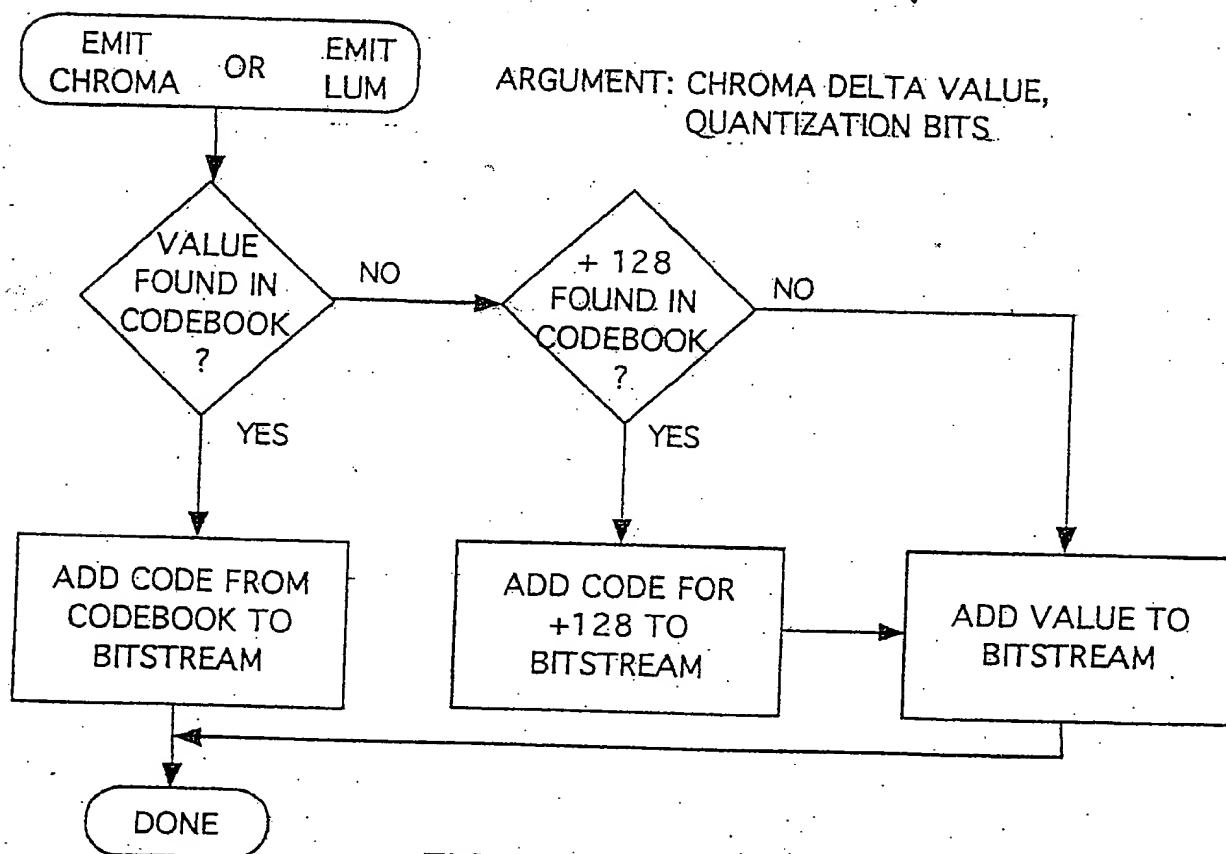


FIG. 17

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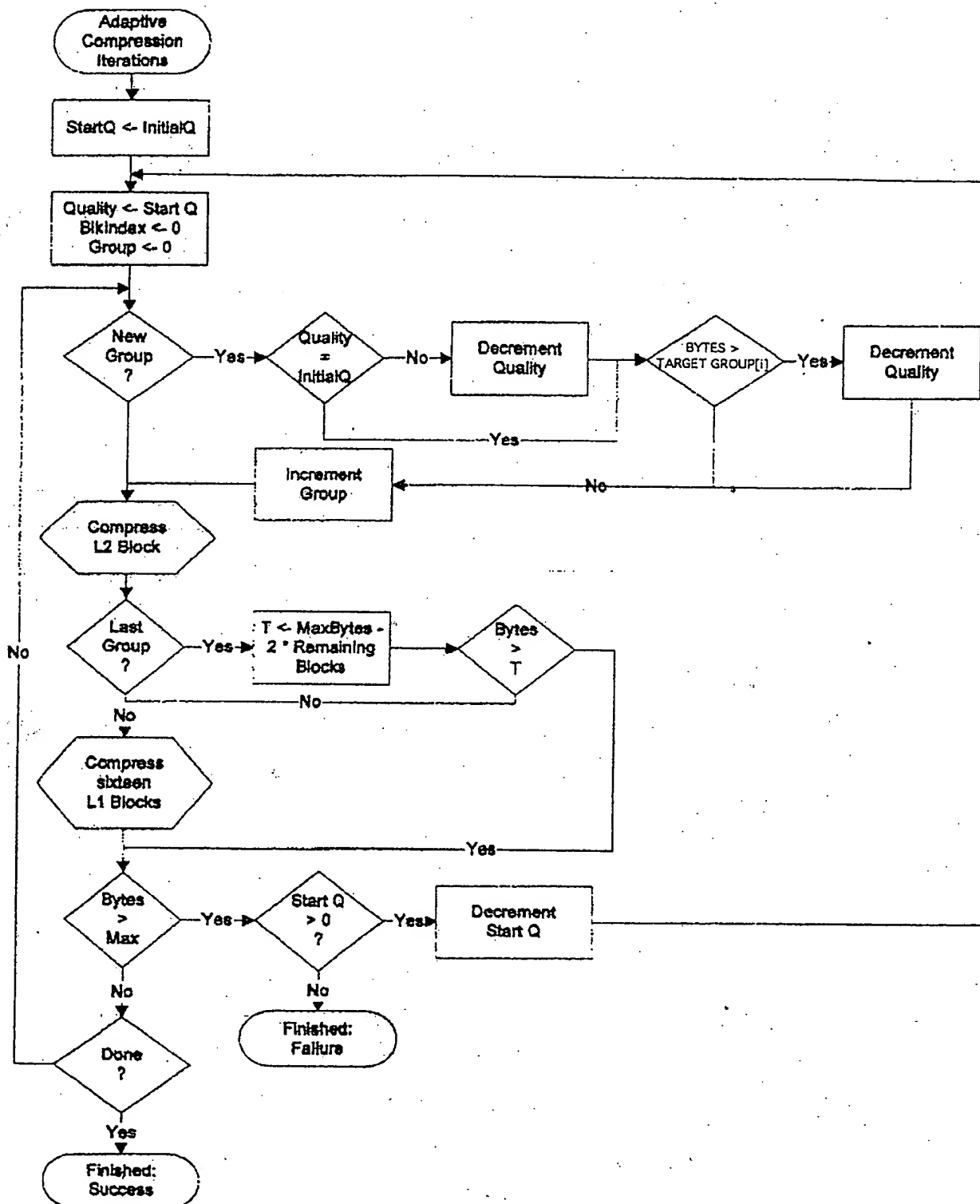
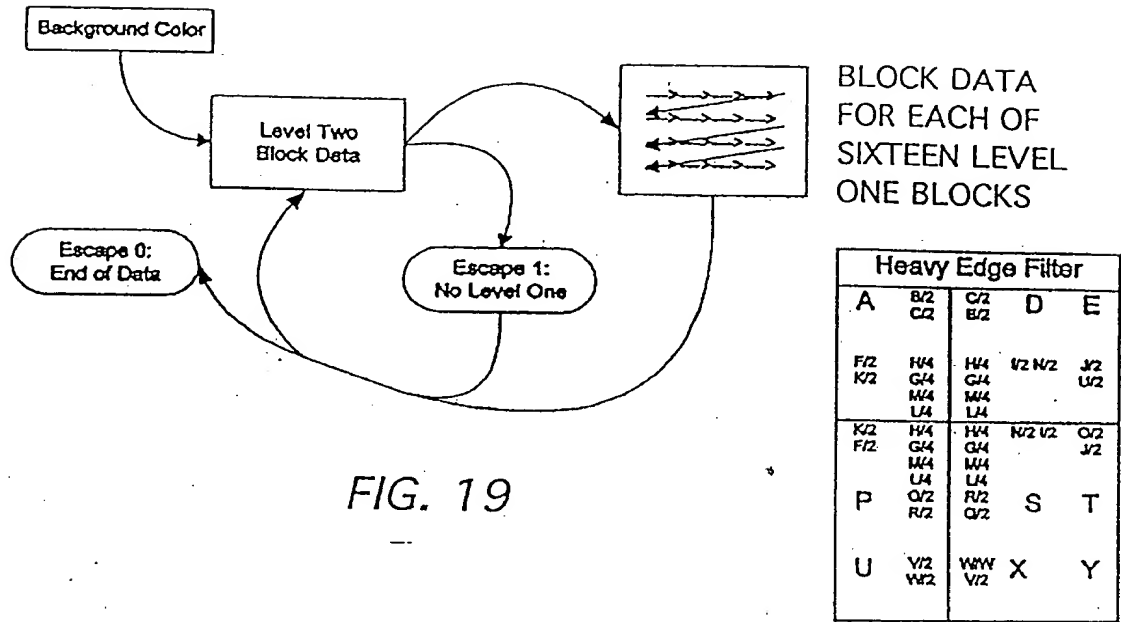


FIG. 18

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Input				
A	B	C	D	E
F	G	H	I	J
K	L	M	N	O
P	Q	R	S	T
U	V	W	X	Y

Light Edge Filter				
A	3B/4 C/4	3C/4 B/4	D	E
3F/4 K/4	9G/16 3H/16 3L/16 3M/16	9H/16 3G/16 3M/16 L/16	3/4 N/4 O/4	3/4 O/4
3K/4 G/4	9L/16 3H/16 3G/16 H/16	9H/16 3L/16 3H/16 G/16	3N/4 M/4	3O/4 J/4
P	3Q/4 R/4	3R/4 Q/4	S	T
U	3V/4 W/4	3W/4 V/4	X	Y

Medium Edge Filter				
A	2B/3 C/3	2C/3 B/3	D	E
2F/3 K/3	4G/9 2H/9 2L/9 M/9	4H/9 2G/9 2M/9 L/9	2/3 N/3 O/3	2/3 O/3
2K/3 F/3	4L/9 2M/9 2G/9 H/9	4M/9 2L/9 2H/9 G/9	2N/3 V/3	2O/3 J/3
P	2Q/3 R/3	2R/3 Q/3	S	T
U	2V/3 W/3	2W/3 V/3	X	Y

FIG. 20D

FIG. 20A

FIG. 20B

FIG. 20C

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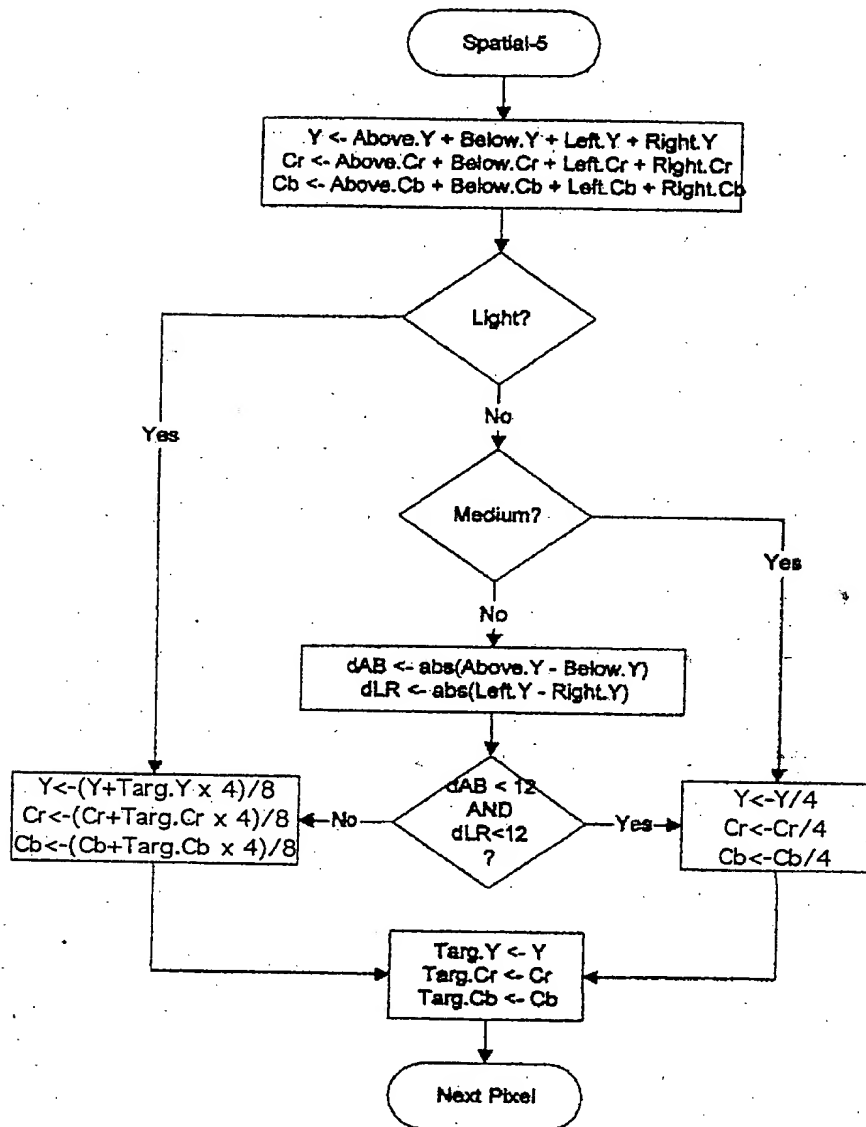


FIG. 21

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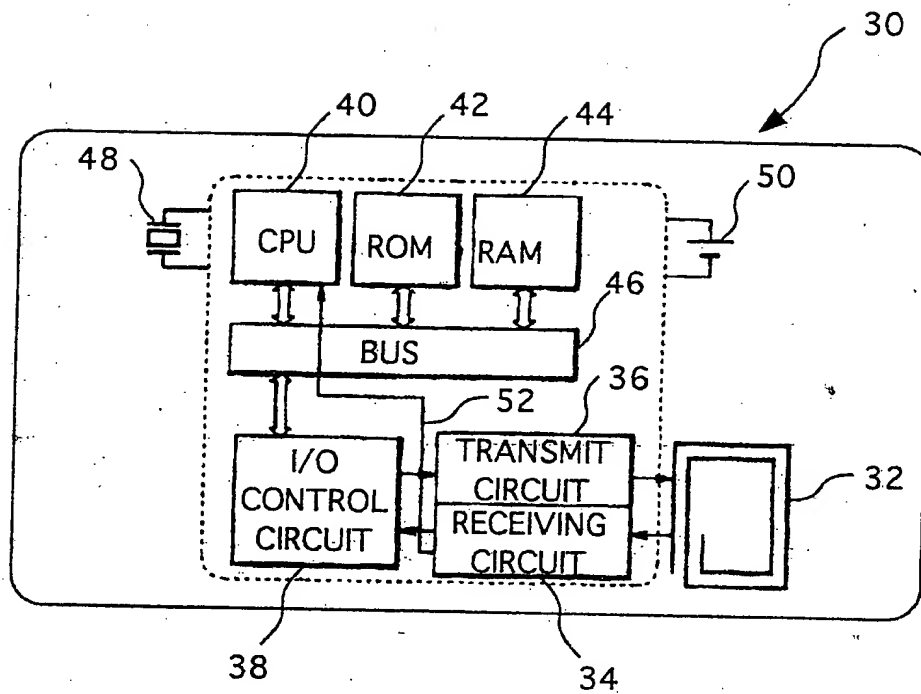


FIG. 22